



**Louisiana Department of Transportation and Development**  
**Traffic Engineering Division**  
**POLICY FOR**  
**TRAFFIC ENFORCEMENT SYSTEMS ON**  
**STATE HIGHWAY RIGHTS-OF-WAY**

**I. Definitions:** The following are hereby defined for this document.

*Intersection* shall mean the place or area where two or more streets intersect; defined by the stop bars or if no stop bars are present, the area created by the projection of the curb lines through the intersection on curb and gutter streets and/or by the projection of the edge of pavement through the intersection of the crossing streets.

*Owner* shall mean the owner of a vehicle as shown on the vehicle registration records of the Louisiana Department of Public Safety, Office of Motor Vehicles, or the analogous department or agency of another state or country.

*Electronic Traffic Signal Enforcement System or Enforcement System* shall mean a system:

- a. Consisting of an electronic/camera system installed to work in conjunction with an electrically operated traffic-control signal; and
- b. Is capable of producing at least two recorded images depicting the rear of a vehicle that is not operated in compliance with the red-displays of the traffic-control signal. The license plate data shall be discernible from at least one of the images.

*Electronic Vehicle Speed Enforcement System or Enforcement System* shall mean a system:

- a. Consisting of an electronic/camera system; which is
- b. Capable of producing at least one recorded image depicting the rear of a vehicle that is being operated at a speed in excess of the posted speed limit. The license plate data shall be discernible from the image.

*Recorded Image for Electronic Traffic Signal Enforcement Systems* means an image recorded by a photographic traffic monitoring system depicting the rear of a vehicle and is automatically recorded as a photograph or digital image, which also depicts the recorded speed, duration the signal was red, date, location, and time of the recorded image.

*Recorded Image for Electronic Vehicle Speed Enforcement Systems* means an image recorded by a photographic traffic monitoring system depicting the rear of a vehicle and is automatically recorded as a photograph or digital image, which also depicts the recorded speed, date, location, and time of the recorded image

*System location* means the approach to an intersection where an Electronic Traffic Signal Enforcement and/or the site where an Electronic Vehicle Speed Enforcement System is directed and in operation.



*Traffic control signal* shall mean a traffic control device displaying alternating red, amber and green lights directing traffic when to stop at or proceed through an intersection.

*Traffic violation defined — Red Light Running* - A vehicle which proceeds past the trailing edge of an installed stop bar of a signalized approach into the intersection when the Traffic Control Signal for that vehicle's direction of travel is emitting a steady red signal indication shall be considered a red light running violation. A vehicle owner is subject to issuance of a civil notice of violation, except where the vehicle facing a steady red signal cautiously enters the intersection to turn right after stopping, and after stopping the vehicle yields the right-of-way to pedestrians lawfully within an adjacent crosswalk and to other traffic lawfully using the intersection.

*Traffic violation defined — Speeding* - Vehicles which exceed the posted speed limit and are traveling at a recorded speed as identified in the speed enforcement tables identified within this document shall be considered a speeding violation and are subject to issuance of a civil notice of violation.

## **II. Purpose**

The purpose of this document is to provide guidance for the Louisiana Department of Transportation and Development (DOTD) in issuing permits to local governments for the installation of electronic traffic enforcement monitoring systems on state highway rights-of-way. Automated enforcement systems are designed to enhance safety and promote compliance with traffic laws. The DOTD permit gives the local governing authority and or its designated agent permission to install, maintain, and operate stationary and mobile enforcement systems on state rights-of-way. The use of these devices is the choice of the local government as part of their authority to enforce traffic laws.

This policy shall become effective for all new photo enforcement permits. Existing permits shall expire 18 months after the issuance of this policy if the permitted installation is determined by the DOTD not to be in compliance with the guidelines contained herein. The DOTD shall notify the Applicant of non compliant permitted locations, a minimum of 90 calendar days prior to the expiration of the 18 month period, to allow the Applicant to come into conformance to these guidelines. New and or amended permits may be issued once conformance to these guidelines is determined by DOTD.

## **III. Permits**

The DOTD will, by "permit," allow the installation of electronic traffic enforcement systems in communities for the express purpose of reducing traffic violations and crashes. Communities which choose to employ electronic traffic enforcement shall engage a qualified professional engineer to prepare the permit and perform the required traffic engineering studies, field verification, and specified inspection(s).

Potential permit locations shall be submitted to the DOTD District for initial review and verification of crash histories. The potential permit locations shall be approved or denied within 15 days after delivery of receipt by the DOTD District permit offices. This initial submittal



shall include the following:

1. Cover Letter
2. Power of Attorney or Resolution authorizing the signee to represent and legally bind the municipality
3. Local Authority
4. Public Education Plan
5. Completed LADOTD Traffic Enforcement Systems Potential Permit Location Request Form
6. Location Map
7. Crash Diagram

If the locations are accepted by the District, the applicant may submit the permit form, local documentation, engineering reports, and plans for review and recommendation of approval by the District. The District shall forward the permits to the headquarters Traffic Engineering Division for review. The Traffic Engineering Division will forward the permits to the DOTD Permits Engineer for approval and issuance. The applicant may begin construction upon receipt of the issued permit.

The permits shall be submitted on the DOTD Traffic Enforcement Systems on State Highway Rights-of-Way permit form. A copy of this form is available on the DOTD web site at:

<http://www.dotd.la.gov>

The permits shall be issued or denied within 30 business days after delivery receipt of the permit application within the DOTD District permit offices. The DOTD shall identify the reasons for rejecting any permit applications. The permittee will have an opportunity to resubmit a revised application to comply with the requirements identified by the DOTD. The permits shall only be authorized to local governments which have traffic regulation with enforcement authority. After the permit is issued, the District shall ensure the equipment is installed and operated in accordance with the approved permit.

The permit applications shall include the following:

1. Local Authority - The permit shall include documentation from the local government indicating the existence of a legal instrument authorizing the use of electronic enforcement within the municipality or parish and documentation from the chief law enforcement officer of the municipality or parish requesting and/or supporting the use of automated traffic enforcement monitoring systems. These documents shall include within them the definitions and standards of enforcement for civil notices of violations.
2. Public Education Plan – The permit application shall include a Public Education Plan which shall include, at a minimum, the following components:
  - a. A 30 day warning period prior to the start date of violations being issued. During this period, construction may be in progress for permanent enforcement fixtures.
  - b. During the warning period, violations may be captured and warning notices

may be mailed out to educate the public about the electronic traffic enforcement installations.

- c. Beginning no later than the first day of the warning period, a public information notice shall announce the start date of the warning period, the start date of enforcement, the enforcement locations, violation amounts, and the violation appeal process.
- d. For permanently fixed speed enforcement locations, installation of radar speed signs are required as a component of the Public Education Plan and are not recognized as being part of the actual enforcement function. Radar speed signs are required as follows:
  - i. For corridors with two or less permitted speed enforcement sites, the radar speed signs shall be required during the warning period at the permitted location and for a minimum of an additional 45 days during which enforcement is allowed.

During the additional 45 days the radar speed signs shall be required at one of the following locations – at the original location, at a location elsewhere on the corridor, or on a nearby state highway with comparable volumes (ADT).
  - ii. For corridors with three or more permitted speed enforcement sites, the radar speed signs are required during the warning period and as long as violations are issued. The radar speed warning sign shall be located at the beginning of the corridor being enforced.
- e. On at least an annual basis, public information notices, shall announce enforcement locations, and the number of violations issued.

### 3. Locations

- a. Monitored *Electronic Traffic Signal Enforcement System* intersections shall be selected based primarily on vehicle/pedestrian traffic crashes. Red Light enforcement is a safety tool intended to improve safety, therefore for a signal to justify installation of this safety countermeasure, the signal must have five or more of the following crash types, identified on LaCrash reports under “Manner of Collision” box within a 12 continuous month time window within the latest available 36 months:
  - i. Right Angle – D
  - ii. Left Turn - F
  - iii. Left Turn – G
  - iv. Right Turn – H (for signalized movements only)



- b. **Monitored *Electronic Speed Enforcement System***- The Department shall issue permits for specific sites for speed enforcement. Identified sites shall consider locations where:
  - i. A speed limit study verifies the posted speed limit has been established based upon an engineering study in accordance with acceptable transportation engineering principles and practices, and
  - ii. Photo enforcement vehicles and trailers shall not be allowed to be parked on the highway shoulder or within the clear zone except when protected by an embankment, bridge rail, or guard rail. Clear zones are defined by the "English Design Guidelines" which is available at [http://www.dotd.la.gov/highways/project\\_devel/design/road\\_design/Memoranda/English\\_Design\\_Guidelines.pdf](http://www.dotd.la.gov/highways/project_devel/design/road_design/Memoranda/English_Design_Guidelines.pdf) and
  - iii. There is a minimum of one standard speed limit sign with supplemental Photo Enforced plaques in advance of the electronic speed enforcement site location.
3. **Speed Tolerance** — For *Electronic Vehicle Speed Enforcement Systems* it is recognized that a notice of violation shall be issued only after allowing an enforcement tolerance above the posted speed limit which has been established by the DOTD. This enforcement tolerance shall be in accordance with the following two tables and should be identified within the authorizing ordinance of the political entity, one for School Zones, and one for Non School Zones. Using these tables as an example, the Owner of a vehicle would receive a violation if the vehicle is traveling at a speed in miles per hour (mph) greater than the posted speed limit in accordance with the following tables at a System Location. The following tables reflects the minimum speed tolerances for various posted school zones which shall be utilized for DOTD permitted Electronic Vehicle Speed Enforcement Systems for School Zones and Non-School Zones:

Posted Speed Limit (Miles Per Hour)	Minimum Speed For Violation to be Issued in a School Zone (Miles Per Hour)	Minimum Speed For Violation To Be Issued (Miles Per Hour)
15	≥21	≥21
20	≥26	≥26
25	≥31	≥31
30	≥36	≥36
35	≥41	≥43
40	≥46	≥48
45	≥51	≥55
50	≥58	≥60
55	≥63	≥65
60		≥70
65		≥75
70		≥80
75		≥85

4. Engineering Report — As part of the *Electronic Traffic Signal Enforcement System* permit approval process, a licensed professional traffic engineer shall evaluate and include as part of the permit/report, specific recommendations which include, but are not limited to the following:
  - a. *Speed Enforcement* - An analysis of existing vehicle speeds and their distribution shall be provided. The report on speeds shall include compilation of recorded speeds in non peak time periods of no less than 2 hours, and no less than 200 vehicle speeds are to be collected. The data shall be compiled to identify the 50<sup>th</sup>%, 85<sup>th</sup>%, speeds and the 10 mph pace of the vehicles stream where speed enforcement is being considered. The engineer may recommend continuation of the posted speed limit or a modification of the posted speed limit as part of the required report on this subject. The DOTD will determine if the speed limit needs to be modified and shall initiate action to cause this to occur before implementing electronic speed control enforcement. The DOTD will not unreasonably delay modifying speed limits.
  - b. *Electronic Traffic Signal Enforcement Systems of Red Light Running* — A report signed and sealed by a Louisiana registered professional engineer shall be prepared. The report shall determine if the traffic signal meets or exceeds the minimum design requirements of the MUTCD, the DOTD Traffic Signal Design manual, and the standards contained in this policy.



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- i. The total change period (yellow and red) clearance intervals shall be determined and implemented under the permit as follows and shall be part of the engineering report:

$$\text{FORMULA USED: } CP = t + \underbrace{[v/(2*a + 2*g*G)]}_{\text{FIRST TERM "Yellow"}} + \underbrace{[(w + l)/v]}_{\text{SECOND TERM "All Red"}}$$

CP = Yellow time plus all red time (sec.)

t = Driver Perception/reaction time (generally, 1 sec.)

v = Approach speed (ft/sec.)

a = Average Deceleration (values between 10 ft/sec\*2 & 15)

g = Acceleration due to gravity (32.2 ft/sec\*2)

G = Grade (percent/100)

w = Cross street width

l = Vehicle length (assumed to be 20 ft.)

			TOTAL CHANGE PERIOD (YELLOW AND RED ) CLEARANCE INTERVALS								
SPEED LIMIT		FIRST TERM	INTERSECTION WIDTH IN FEET								
			FIRST TERM + SECOND TERM FOR VARIOUS CROSS STREET WIDTHS								
MPH	ft/sec	$t+[v/(2*a+2*g*G)]$	40	45	50	55	60	65	70	75	80
30	44.00	3.20	4.56	4.68	4.79	4.90	5.02	5.13	5.25	5.36	5.47
35	51.33	3.57	4.74	4.83	4.93	5.03	5.13	5.22	5.32	5.42	5.51
40	58.67	3.93	4.96	5.04	5.13	5.21	5.30	5.38	5.47	5.55	5.64
45	66.00	4.30	5.21	5.28	5.36	5.44	5.51	5.59	5.66	5.74	5.82
50	73.33	4.67	5.48	5.55	5.62	5.69	5.76	5.83	5.89	5.96	6.03
55	80.67	5.03	5.78	5.84	5.90	5.96	6.03	6.09	6.15	6.21	6.27
60	88.00	5.40	6.08	6.14	6.20	6.25	6.31	6.37	6.42	6.48	6.54
65	95.33	5.77	6.40	6.45	6.50	6.55	6.61	6.66	6.71	6.76	6.82

\* FOR SPEED LIMIT OF 55 MPH OR LESS, AND WHERE THE VALUES ABOVE ARE HIGHLIGHTED IN GRAY, THE YELLOW INTERVAL SHALL BE 5.0 SECONDS, AND THE ALL RED SHALL BE THE VALUE IN THE ABOVE TABLE MINUS 5.0 SECONDS. EXAMPLE, FOR 45 MPH AND A W VALUE OF 70 FEET = 5 SECONDS OF YELLOW TIME WITH AN ADDITIONAL 0.66 SECONDS OF ALL RED TIME.

\* FOR SPEED LIMIT 60 MPH, THE YELLOW INTERVAL SHALL BE NO LESS THAN 5.4 SECONDS, AND THE ALL RED SHALL BE THE VALUE IN THE ABOVE TABLE MINUS 5.4 SECONDS. EXAMPLE, FOR 60 MPH AND A W VALUE OF 70 FEET = 5.4 SECONDS OF YELLOW TIME WITH AN ADDITIONAL 1.08 SECONDS OF ALL RED TIME.

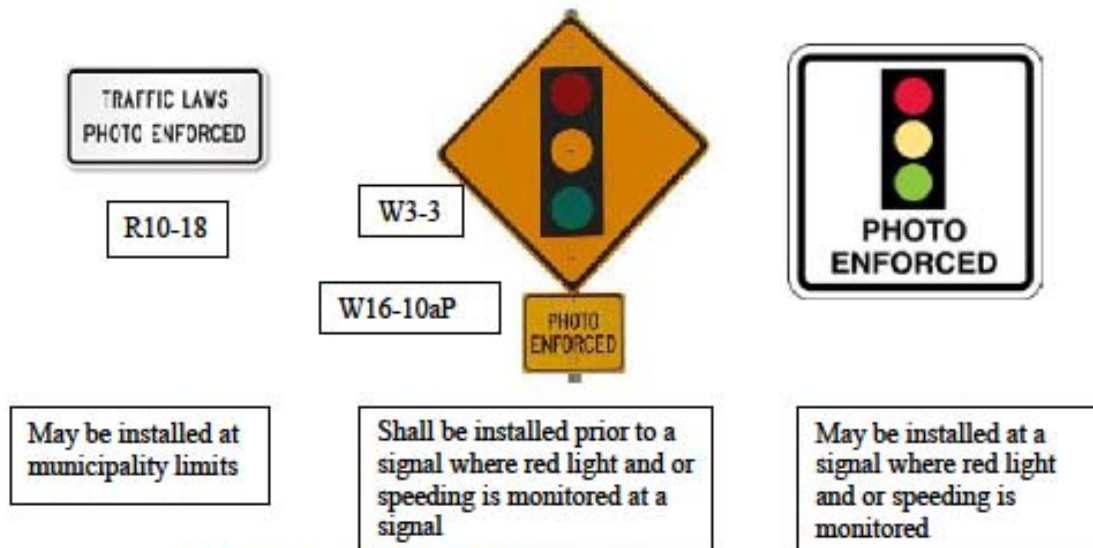
\* FOR SPEED LIMIT 65 MPH, THE YELLOW INTERVAL SHALL BE NO LESS THAN 5.8 SECONDS, AND THE ALL RED SHALL BE THE VALUE IN THE ABOVE TABLE MINUS 5.8 SECONDS. EXAMPLE, FOR 65 MPH AND A W VALUE OF 70 FEET = 5.4 SECONDS OF YELLOW TIME WITH AN ADDITIONAL 0.99 SECONDS OF ALL RED TIME.



- ii. All signal faces shall utilize LED-type indications to increase "target" value of the displays. Regulatory and/or warning signs approaching an enforcement system shall be visible and legible.
  - iii. New stop bars are to be installed or repaired to "like new" condition and located in accordance with the MUTCD and LADOTD Pavement Marking Standard plans.
  - iv. A red light running violation shall be defined as occurring whenever a vehicle driver proceeds past the trailing edge of the stop bar after the display of a steady red indication and enters the intersection.
  - vi. Once operational, the permittee or its designated agent shall notify the DOTD within 5 working days that the traffic signal installation is functioning as designed, and all detectors are working properly and indicate the specific time and date the system will commence electronic enforcement.
- 6. Plans - The permit application shall include plans stamped by a Louisiana professional engineer for each installation. These plans shall include the location of traffic enforcement system equipment, and the location of the required advance regulatory signs noted in this document. Connection to the traffic signal circuits shall utilize optically isolated switches and enforcement equipment will sense traffic signal phase changes by monitoring current flow, and not by communication with the signal controller. Monitoring of the signal conductors may occur within or outside of the traffic controller cabinet with all wires clearly labeled. Wires shall be enclosed in appropriate conduit or installed overhead in accordance with DOTD signal standard details. Cabinets shall only be accessed with DOTD District Traffic representative for signals not covered under a full maintenance agreement.
- 7. Signing - Signs indicating traffic compliance is being enforced electronically may be placed at the jurisdictional limits of the local government, and shall be installed on each approach to the location where a traffic enforcement monitoring device is in operation. Signs at the municipality limits shall be the R10-18 as shown in the MUTCD, or an approved alternate. The details of each sign assembly and location of same shall be depicted in the supporting engineering report as part of the permit application for electronic enforcement systems as noted in this document.
  - a. Signs for Electronic Traffic Signal Enforcement — Appropriate warning signs shall be installed on the approaches to the intersection where red light running is being monitored. These black on yellow background signs (W3-3 and W16-10aP assembly), shall be installed at locations in accordance with the current version of the adopted MUTCD guidelines for "Placement of Warning Signs" (where Condition B is 0, a potential stop condition.) Similar signs may be installed for non monitored approaches when at least one of the approaches utilizes electronic enforcement systems. Additional regulatory signs may be mounted adjacent to traffic signal heads and or mounted on traffic signal mast arms if a full maintenance agreement for traffic signals exists with the permittee. The permittee is responsible for installing and maintaining these signs.

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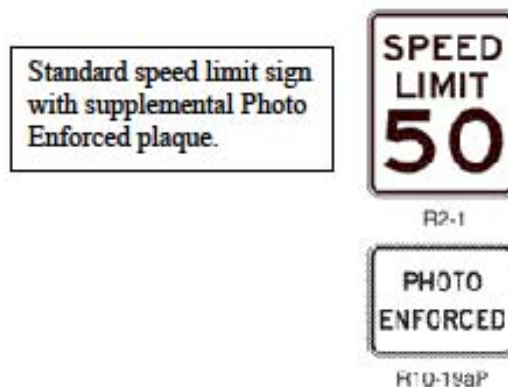
b. Signs for Electronic Speed Enforcement —

- i. Radar speed signs shall be installed and maintained on each corridor monitored by electronic speed enforcement as required under the Public Education Plan. These signs may be permanent or mobile as shown below. The exact location of the radar speed signs shall be determined by the DOTD District office. If a trailer is used, it shall be placed outside of the clear zone or protected by positive protection. The sign shall be programmed such that speeds over 15 mph of the posted speed shall not be displayed to avoid misuse of the sign.





- ii. The permittee shall install and maintain a minimum of one standard speed limit sign (R2-1) with supplemental Photo Enforced plaques (R10-19) in advance of the electronic speed enforcement site location. The permittee is responsible for installing and maintaining the speed limit sign assemblies.



8. Countermeasures – Prior to installing photo enforcement there are appropriate countermeasures that should be attempted at the intersection. Some of these countermeasures have been discussed in the ITE “Making Intersections Safer: A Toolbox of Engineering Countermeasures to Reduce Red-Light Running”. The countermeasures shall be identified in the engineering report and noted how long they have been in place.
9. System Testing Plan – The local government and/or its designated agent shall provide tests for accuracy at devices at regular intervals. Each such test shall be made in accordance with the manufacturer's recommended procedure. Records shall be maintained indicating the results of each test. Such test results shall be public records subject to inspection. If any such device fails to meet the manufacturer's minimum accuracy requirements, such traffic enforcement system shall be removed from service and thereafter shall not be activated until it has been serviced and validated.
10. Reporting - The permittee shall prepare an annual traffic crash summary report for the preceding calendar year which shall be prepared and submitted to both the DOTD District and HQ Traffic Engineering Division, no later than July 1st of each year. For Traffic Enforcement Systems at intersections, this report shall summarize the number of reported traffic crashes within 200 feet of the stop bar of each approach of the permitted locations, using available traffic crash data and if performing speed enforcement shall include the present 85<sup>th</sup> percentile speed according to DOTD policy. For Traffic Enforcement Systems on routes, this report shall summarize the number of crashes on the route, excluding intersection related crashes and present the 85<sup>th</sup> percentile speed according to DOTD's policy.

Intersection and route reports shall contain an analysis of available traffic crash reports noting the differences, if any, prior to the activation of the permitted locations and a similar period after activation of the electronic enforcement equipment. Once the system has been installed for more than 3 years, the 3 year period prior to installation will be reported. Both types of reports shall also include a summary of the last year's total citations and basic statistics on the type of violations.

#### **IV. System Operation**

Maintenance Repair of Damaged Enforcement Equipment – The local government or its designated agent agrees to respond timely to reports of traffic enforcement system damage through any licensed local contractor or an authorized agent for that City or Parish, as a result of a traffic crash or other activity which disturbed the equipment from its permitted location. Other infrastructure repairs are anticipated to be completed within three calendar days upon notification by the public or the DOTD. The permittee shall hold the DOTD harmless for damages or injuries arising from the installation of the traffic enforcement system under the permit.

Streaming Video — The DOTD shall be allowed access to available streaming video at the permitted locations, subject to the DOTD providing communications complying with the permittee's and/or their agent's bandwidth and security protocol requirements to aide in traffic monitoring.

#### **V. Removal**

If the DOTD determines the permittee is not in compliance with the requirements of the permit, the DOTD shall immediately notify the permittee of the defect in writing. The permittee shall have 10 calendar days from receipt of the DOTD notice to rectify the specified defect and shall notify the DOTD of the resolution. If the permittee fails to correct the defect within the 10 days noted, to the satisfaction of the DOTD, said permit may be cancelled. No new permits shall be issued if an existing permit has been identified for removal, but has not been removed as directed.

If the annual traffic crash report indicates the overall number of total injury crashes increases, the DOTD may require that the system be removed. Removal will be considered if recommended by an engineering report that includes all relevant factors which might have contributed to the recorded increase in crashes, including but not limited to changes in nearby or adjacent land use and/or development, traffic volume increases or decreases, and or traffic signal phasing changes during the evaluation periods, etc..

Permits issued for the installation of traffic enforcement systems on state highway rights-of-way shall be contingent upon the local government meeting the requirements of this document. If the DOTD permit is cancelled, the municipality or its designated agent shall remove the equipment installed under the permit within DOTD's rights-of-way within 60 days of notice.

Any cost to remove traffic enforcement equipment shall be borne by the permittee or its designated agent. The permittee shall restore DOTD rights-of-way to as good as or better than before the permit was issued. Final inspection by the DOTD will be conducted to assure compliance.